

# SLOW PASSAGE THROUGH BIFURCATIONS BY PWL SYSTEMS

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Given a uniparametric differential equation that undergoes a bifurcation at one value of the parameter, one can consider the effect on the entire flow when introducing slow dynamics to the parameter and making it varying around the bifurcation value. This procedure drives to a fast slow system. Some effects on the global flow that appear through this dynamic bifurcation are easily predictable in the context of Fenichel's theory, but other effects are more surprising and we call them slow passage phenomena through the bifurcation. One of these surprising effects associated with the loss of stability of an equilibrium is the appearance of a non-trivial delay in the loss of stability.

In this talk we will use the piecewise linear context to describe quantitatively and qualitatively the essence of the occurrence of such a delay in the loss of stability when passing through a transcritical bifurcation.